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$$2 \times 9 = 180$$

$$2 \times 9 = 180$$

$$180 - 2 \times 9 = 162$$

$$2 \times 9 = 180$$

$$110 + 2 \times 9 = 128$$

$$110 - 2 \times 9 = 92$$

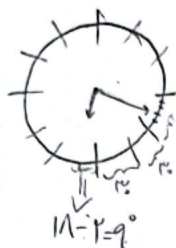
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$$b) \Rightarrow |d \times M - \frac{1}{2} H| = \left| \frac{d \times 180}{180} - \frac{1}{2} \times 180 \right| = 90$$

$$110 - 2 \times 9 = 92$$

الف)

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$$2 \times 9 = 180$$

$$2 \times 9 = 180$$

$$11 - 2 \times 9 = 1$$

$$90 + 18 + 9 = 117$$

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$$b) \left| \frac{d \times 180}{180} - \frac{1}{2} \times 180 \right| = 111$$

$$a) \Rightarrow \frac{\alpha}{\pi} R^2 = \frac{\frac{\pi}{2} \times \frac{\pi}{2}}{\pi} = \frac{\pi}{4} \Rightarrow \alpha = \frac{\pi}{2}$$

$$\alpha = \frac{\pi}{2}$$

$$R = \pi$$

$$b) \Rightarrow |AB| = \alpha R = \frac{\pi}{2} \Rightarrow \frac{\pi}{2} \times \frac{\pi}{2} = \frac{\pi^2}{4}$$

$$a) \Rightarrow \frac{1}{\pi} \times \frac{\pi}{2} \times \frac{\pi}{2} \times \frac{\pi}{2} = \frac{\pi^3}{8}$$

$$b) \Rightarrow \sqrt{a^2 + b^2 - 2ab \cos C} = \sqrt{9^2 + 10^2 - 2 \times 9 \times 10 \times \cos 110} = \sqrt{149} \approx 12.2$$

$$A + 150 = 180$$

$$A = 30$$

$$\frac{a}{\sin A} = \frac{b}{\sin B} \Rightarrow \frac{10}{\sin 30} = \frac{10\sqrt{3}}{\sin B} \Rightarrow \sin B = \frac{\sqrt{3}}{2}$$

$$\sin 60 = \frac{\sqrt{3}}{2}$$

$$C = 180 - 30 - 60 = 90$$

نسبت های مثلثات

$$b) \Rightarrow \frac{\pi}{2} = \frac{\pi}{2}$$

$$10 \times \frac{\pi}{180} = \frac{\pi}{18}$$

$$\tan(\pi - \alpha) = -\tan \alpha$$

$$\tan(\pi + \alpha) = \tan \alpha$$

$$\tan(\pi - \alpha) = -\tan \alpha$$

$$\tan(\pi + \alpha) = \tan \alpha$$

$$\tan(\pi - \alpha) + \tan(\pi + \alpha)$$

$$-\tan \alpha + \tan \alpha$$

$$\frac{\tan \alpha}{-\tan \alpha - \tan \alpha}$$

$$= -1$$

$$\tan(\pi - \alpha) - \tan(\pi + \alpha)$$

$$-\tan \alpha - \tan \alpha$$

$$= -2 \tan \alpha$$

$$\frac{\pi}{17} \times \frac{110}{\pi} = 1d = a \quad \tan w = \frac{1}{a} \quad \tan(90^\circ - 1d) = \cot 1d = \frac{1}{\tan 1d} = \frac{1}{a}$$

$$\tan 1d = \tan(110^\circ - 90^\circ) = -\tan 80^\circ = -\frac{1}{a}$$

$$\tan 1d = \tan(110^\circ - 1d) = -\tan w = -a$$

$$\tan 1d = \tan(110^\circ + 1d) = \tan 90^\circ = \frac{1}{a}$$

$$\frac{\frac{1}{a}}{\frac{1}{a} + (-\frac{1}{a})} = \frac{\frac{1}{a}}{-\frac{1}{a}} = -1$$

$$\frac{\sin \alpha + \cos \alpha}{\cos \alpha} + \frac{\sin \alpha - \cos \alpha}{\cos \alpha} = \frac{\tan \alpha + 1}{\tan \alpha - 1} + \frac{\tan \alpha - 1}{\tan \alpha + 1} = \frac{\tan^2 \alpha + 1 + \tan^2 \alpha - 1}{(\tan \alpha - 1)(\tan \alpha + 1)} = \frac{2\tan^2 \alpha}{\tan^2 \alpha - 1}$$

$$\tan^2 \alpha + 1 = \tan^2 \alpha - 1$$

$$- \tan^2 \alpha = -2$$

$$\tan^2 \alpha = 2$$

$$\frac{\tan^2 \alpha + 1}{\tan^2 \alpha - 1} = -1$$

$$\frac{\sin \alpha}{\cos \alpha} - \frac{1}{\cos \alpha} + 1 = \frac{\tan \alpha - 1}{\tan \alpha + 1} = -1$$

$$\frac{\sin \alpha}{\cos \alpha} + \frac{1}{\cos \alpha} - 1 = \frac{\tan \alpha + 1}{\tan \alpha - 1} = -1$$

$$\sin^2 \alpha - 2\cos^2 \alpha + 1 = 1 \Rightarrow \sin^2 \alpha - 2\cos^2 \alpha = 0$$

$$\sin^2 \alpha + 1 - 2\cos^2 \alpha = 0 \Rightarrow \sin^2 \alpha + 1 - 2(1 - \sin^2 \alpha) = 0 \Rightarrow \sin^2 \alpha + 1 - 2 + 2\sin^2 \alpha = 0 \Rightarrow 3\sin^2 \alpha - 1 = 0 \Rightarrow \sin^2 \alpha = \frac{1}{3} \Rightarrow \sin \alpha = \frac{1}{\sqrt{3}}$$

$$\cos(\frac{\pi}{4}) = \cos(\frac{\alpha}{2}) = \frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}}$$

$$\cos(\frac{\pi}{4}) = \frac{1}{\sqrt{2}}$$

$$\cos(\frac{\pi}{4}) = \sqrt{\frac{1 + \cos(\frac{\pi}{2})}{2}} = \sqrt{\frac{1 + 0}{2}} = \frac{1}{\sqrt{2}}$$

$$\sin(\frac{\pi}{4}) = \sin(\frac{\alpha}{2}) = \frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}}$$

$$\sin(\frac{\pi}{4}) = \sqrt{\frac{1 - \cos(\frac{\pi}{2})}{2}} = \sqrt{\frac{1 - 0}{2}} = \frac{1}{\sqrt{2}}$$

$$\sin(\frac{\pi}{4}) = \frac{1}{\sqrt{2}}$$

در این حالت می توانیم از فرمول های زیر استفاده کنیم